








# Work Order ID 61250

August 11, 2010 11:55:01 AM



Page 1

Item ID: D6101-003 Accept  Setup Start   
Revision ID: Stop   
Item Name: Saddle Billet, 7075  
Start Date: 8/26/10 Start Qty: 40.00  Cust Item ID:  
Required Date: 8/26/10 Req'd Qty: 40.00  Customer:  
Reference:

Approvals: Process Plan: CZ Date: 10/8/11 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_  
Run Start   
Stop 

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D6101	Rev B

100 0.00



Purchasing

PURCHASING

Memo

Issue P/O: 12019  
a) Description: Alluminum billet  
b) 7.875" x 6.250" x 2.00" thick  
c) Tolerance on all dimensions are +0.030"/-0.000"  
d) Grain direction along 7.875" length  
e) Material: 7075-T7351 (QQ-A-250/12)  
f) Material certification required

0.00

CZ 10/8/11 (40)

110 0.00



Packaging

Receive & Inspect for Damage & Mat'l Certs

Memo

Ensure material certification is attached

0.00

CZ 8/27 (40)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 61250**

August 11, 2010 11:55:01 AM



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Item ID: D6101-003

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle Billet, 7075

Start Date: 8/26/10 Start Qty: 40.00



Cust Item ID:

Required Date: 8/26/10 Req'd Qty: 40.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 	QC6- Inspect dimensions to drawing	0.00				40	0		
QC Quality Control	Memo Ensure Material certification comply to Dwg D6101	0.00							
130 	Identify as per dwg & Stock Location: <u>MAT</u>	0.00				40	0		
Packaging Packaging	Memo	0.00							
140 	QC21- Final Inspection - Work Order Release	0.00							
QC Quality Control	Memo	0.00							

10/09/02

MF  
10-9-02

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

August 11, 2010 11:55:01 AM

Page 1

Work Order ID: 61250



Parent Item: D6101-003



Parent Item Name: Saddle Billet, 7075


Start Date: 8/26/10

Required Date: 8/26/10

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP A: ☐01.05.04☐New Issue☐EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-003P  7075-T7351 2X6.25X7.875		Purchased	No			110	Each	0.0000	1	40			



MF 10-9-2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

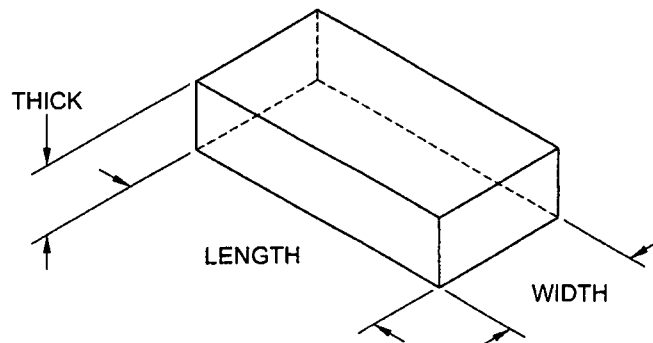
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

**B** ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

**B**

**RELEASED**  
09/01/15/W

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 61250  
C21018/11

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	<small>COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

\*\*\*PO REPRINT\*\*\*

Purchase Order ID PO12019

Purchase Order Date 6/03/10  
PO Print Date 8/11/10

Page Number 1 of 1

Order From : VC-MET001  
METAUX CASTLE  
A.M. CASTLE & CO. (CANADA) INC. - BOX B9204 PO BOX 9100  
TORONTO, ON M4Y 3A5  
CA

*Release*

Contact Name		Buyer	Chantal Lavoie
Vendor Phone	514 694 9575	Requisition Nbr	
Vendor Fax	514 695 3281	Tax Resale Nbr	10127-2607
Vendor Account Nbr		Terms	Net 30
		Currency	CAD
		FOB	

Ship To : DART AEROSPACE LTD 1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req. Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D6101-001P <i>release 30</i>	7075-T7351 2X6X6.25	10/29/10 Yes	60.00 Each		\$45.1000	\$2,706.00
2	D6101-003P	7075-T7351 2X6.25X7.875	6/03/10 Yes	40.00 Each		\$59.1600	\$2,366.40
2	D6101-003P <i>release 40</i>	7075-T7351 2X6.25X7.875	10/29/10 Yes	70.00 Each		\$59.1600	\$4,141.20
3	D6101-005P	7075-T7351 8.25X5.0X2.5	10/29/10 Yes	75.00 Each		\$61.0000	\$4,575.00
4	D6101-013P	Saddle billet	10/29/10 Yes	20.00 Each		\$125.0000	\$2,500.00
5	D6102-013P	6061-T6 7.0x6.5x2.0	10/29/10 Yes	20.00 Each		\$32.0000	\$640.00

PO Total: \$16,928.60

MATERIAL CERTIFICATION  
REQ'D UPON DELIVERY

PO Instructions: REF: P/O 8393

No substitution or deviation without  
consent.  
Certificate of Conformity or Material  
Certification required when applicable

Change Nbr: 4

Change Date: 8/11/10



**Castle Metals®**

A. M. Castle &amp; Co.

## PACKING SLIP

Page 1 of 1

Shipment No:465111

<b>Ship From:</b> Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		<b>Sold To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		<b>Ship To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		<b>Deliver To:</b> DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
<b>Date Shipped</b> 26-AUG-10	<b>F.O.B.</b> ORIGIN	<b>Freight Terms</b> Prepaid		<b>Carrier</b> MANITOULIN		<b>BOL No</b> 465111-2	

<b>Shipment Details</b>				<b>Final Destination Branch - MON</b>			
<b>Order No</b> 930039	<b>Line No</b> 1	<b>Item No</b> 6857.MO	<b>Description</b> 2.0000.PL.7075.T7351.ALUMINUM.48.5000.144.5000 CUT 2SIDED TO 6.25 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 7.875")) X 7.875 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 7.875")) - ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/12				
<b>Purchase Order No</b> 12019		<b>Part Number</b> YOUR ITEM NUMBER: D6101-003		<b>Ordered Qty</b> 40 PCS		<b>Invoice Qty</b> 40 PCS	
<b>Details</b>							
<b>Delivery No.</b> 40544313	<b>Mill</b>	<b>Heat Number</b> 456750A9	<b>Mech Id</b>	<b>PCS</b> 40	<b>Width (IN)</b>	<b>Length (IN)</b>	<b>Shipped Qty (LBS)</b> 406.43

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.	
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.	
Reviewed by Authorized Castle Metals Representative:	Date:

*aml* 10/09/02

**SHIP TO:**  
A M CASTLE & CO  
3400 NO. WOLF ROAD  
FRANKLIN PARK, IL 60131

**SOLD TO:**  
AM CASTLE & CO- SOLD TO  
3400 NO. WOLF ROAD  
FRANKLIN PARK, IL 60131

**KAISER  
ALUMINUM**

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

# **CERTIFIED TEST REPORT**

Serial Number  
4149447

<b>CUSTOMER PO NUMBER:</b> 01-15905		<b>WORK PACKAGE:</b>		<b>CUSTOMER PART NUMBER:</b> 6857 A97075-60		<b>SHIP RUN/LOAD ID:</b> 101432/18		<b>GOV'T CONTRACT NUMBER:</b>						
<b>KAISER ORDER NO:</b> 1075544		<b>LINE ITEM:</b> 1		<b>SHIP DATE:</b> 11-DEC-2008		<b>ALLOY:</b> 7075		<b>CLAD:</b> BARE						
<b>WEIGHT SHIPPED:</b> 5732 LB		<b>QUANTITY:</b> 4 PCS EST.		<b>S/L NUMBER:</b> 2020668		<b>GAUGE:</b> 2.0000 IN		<b>TEMPER:</b> T7351						
<b>PRODUCT DESCRIPTION:</b> MILL FINISH PLATE					<b>WIDTH:</b> 48.600 IN					<b>LENGTH:</b> 144.500 IN				

## **Certified Specifications**

AMS 4078/RevG  
ASTM B 209/Rev07  
BSS 7055/RevA  
DPS 4.713/RevAH  
G8816100/RevG/Amd1

AMS-QQ-A-250/12  
ASTM B 594/Rev06  
CMMP 025/RevR  
EAC MS1011/RevE  
MMS 159/RevN

AMS-STD-2154  
BAC 5439/RevH  
CSTI 008/RevC  
GAMP8 9101/RevB  
PS 21211/RevK

Test Code: 4297

## **Test Results**

Lot: 456514AB Cast 198

Drop 21

Ingot 1

(ASTM E8/B557)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	73.2 : 73.8 (808 : 809)	63.6 : 84.9 (439 : 447)	11.6 : 11.8

(ASTM E1004)

Conductivity %IACS :	41.2 Min	41.7 Max
(MS/M) :	23.9 Min	24.2 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.21	1.5	0.03	2.4	0.18	5.7	0.03	0.01	0.01	TOT 0.05

*Amh*  
10/09/02

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

8474558927 P.022  
1 010 1021/010 1 100

## CERTIFIED TEST REPORT

Serial Number  
4149447

Lot: 456750A9 Cast 188

Drop 20

Ingot 1

(ASTM E8/B667)

Tensile:	Temper	Dir / # Tests LT / 2 (Min:Max)	Ultimate KSI (MPA) 73.1 : 73.7 (504 : 508)	Yield KSI (MPA) 62.7 : 83.4 (432 : 437)	Elongation % 11.9 : 12.1
	T7351				

(ASTM E1004)

Conductivity %IACS : (MS/M) :	41.8 Min 24.2 Min	42.2 Max 24.5 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual	0.08	0.22	1.4	0.02	2.4	0.20	5.7	0.03	0.01	0.01	TOT 0.06

### ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075 MIN	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.06
MAX	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

### TEST NOTES

7075-T7351 plate 3.001-3.500" thick, if ultrasonically inspected, meets requirements of CMMP025 per SDR CMMP025-KaiserT-1. 7075-T7351 plate 3.501-5.000" thick, if ultrasonically inspected, meets requirements of CMMP025 per SDR CMMP025-KaiserT-2.

Metal represented by this test report was immersion ultrasonically tested from one side and meets the Class A and Class B requirements of all specifications referenced on this test report.

CASTLE METALS CORP.  
DATE RCVD 10/10/02  
IAC 6851008  
APPROVED BY [Signature]

[Signature]  
10/10/02

### CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER DFARS 228.872-1(b), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF DFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLIES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR FINGERING ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW, 180-9001:2000 CERTIFIED.

BILL POYNOR, LABORATORIES SUPERVISOR

[Signature]